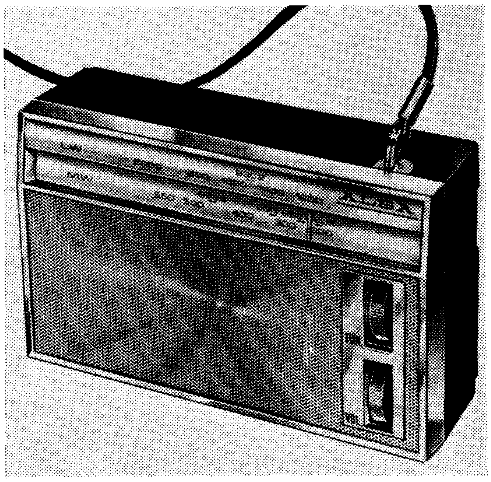
service data sheet R324 ALBA 222

ALBA 222

portable radio receiver



This is a two-band portable radio employing six transistors and one diode. Waveband coverage is:

MW: 187–565m.
LW: 1,200–2,000m.

The semiconductor complement is 2SA321 mixer-oscillator, 2SA203 1st i.f. amplifier, 2SA202 2nd i.f. amplifier, 2SB185 audio amplifier, 2SB187/2SB187 audio output pair, 1S188 detector.

Specification figures include audio output 300mW maximum, 200mW undistorted; signal/noise ratio for 5mW output at 1mV/m input—35dB (m.w.), 28dB (l.w.); distortion 5 per cent at 50mW output; sensitivity for 10mW output—120µV (m.w.), 240µV (l.w.).

The receiver operates from 9V (Ever Ready PP3 or equivalent). Current drain 10mA quiescent, 48mA maximum.

ALIGNMENT

In order to carry out the alignment procedure, it will first be necessary to separate the printed circuit assembly from the front panel assembly, as described under "Dismantling". Connect output meter (40Ω) across the speaker terminals. Turn volume control to maximum. It is recommended that alignment be carried out by connecting the output of the signal generator to a coupling loop, placed near to, and coaxial with, the ferrite rod aerial assembly. The output from the signal generator should be kept low enough to avoid a.g.c. action, which would lead to misleading readings on the output meter.

I.F. Alignment

Switch receiver to m.w. and tune to the low frequency end of the band. Inject into loop a signal of 470kHz and trim the cores of T3, T2 and T1, in that order, for maximum output, reducing signal generator output as the circuits come into alignment. Repeat for optimum results.

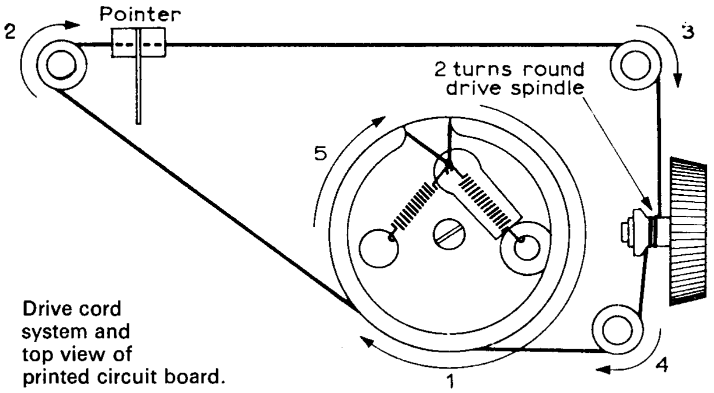
R.F. Alignment

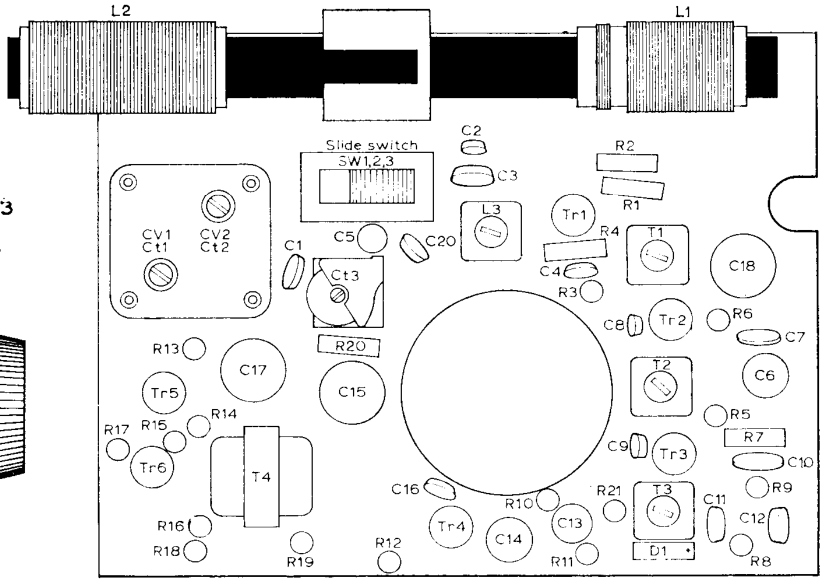
Medium wave: Tune receiver to the low frequency end of the m.w. band. Inject into loop a signal of 520kHz and trim core of oscillator transformer L3 for maximum output. Re-tune receiver to the high frequency end of the band, inject a signal of 1650kHz and adjust oscillator trimmer Ct2 for maximum output. Repeat these two operations.

Tune receiver to 500m mark. Inject signal of 600kHz and adjust aerial coil L1, by sliding along rod, for maximum output. Retune receiver to 208m (Luxembourg), inject signal of 1439 kHz and adjust aerial trimmer Ct1 for maximum output. Repeat these two operations.

Long wave: Tune receiver to low frequency end of band and check that calibration is correct (144kHz). Retune receiver to high frequency end

continued overleaf





Drive cord system and top view of printed circuit board.

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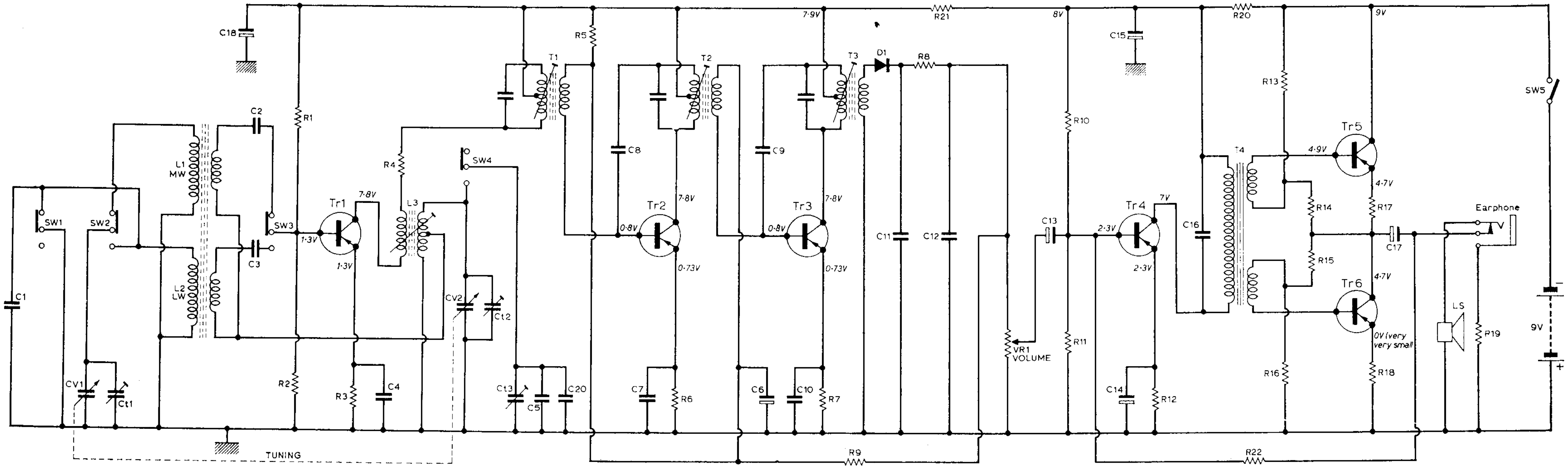


of band. Inject signal of 263kHz and adjust long-wave oscillator trummer Ct3 for maximum output.

Tune receiver to 1,875m, inject signal of 160kHz and adjust long-wave aerial coil L2, by sliding along ferrite rod, for maximum output. Re-tune receiver to 1,250m and check that calibration is correct (240kHz). Repeat last two operations.

Reseal all trimmers and aerial coils.

DISMANTLING

To obtain access to the battery, remove the battery cover by sliding it off in the direction indicated.

To remove the case back, insert screwdriver blade into slot at bottom of case back and turn gently. The back cover will then be released to the extent of the leads to the earphone socket, which may be unsoldered if necessary.

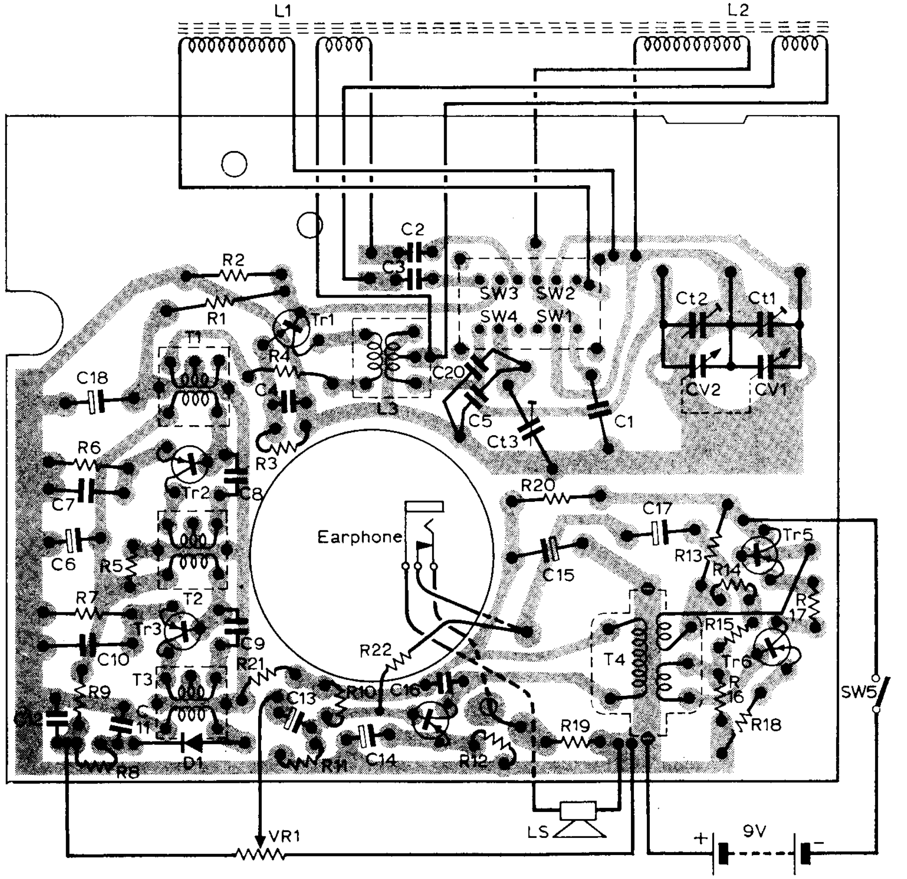
To remove the circuit board assembly from the front panel assembly, remove three Phillips-head screws—two securing the scale plate to the case front and the other securing the control knob moulding. This will detach the printed circuit assembly to the extent of the leads to the loudspeaker.

Component Values

R1	27kΩ
R2	5·6kΩ
R3	3·9kΩ
R4	150Ω
R5	82kΩ
R6	1·5kΩ
R7	820Ω
R8	3·3kΩ
R9	8·2kΩ
R10	15kΩ
R11	6·8kΩ
R12	1kΩ
R13	2·7kΩ
R14	120Ω
R15	2·7kΩ
R16	120Ω
R17	1·3Ω
R18	1·3Ω
R19	56Ω, 20%
R20	220Ω
R21	100Ω, 20%
R22	560kΩ

All resistors are 10% unless otherwise specified.

C1	40pF
C2	0·0047μF
C3	0·01μF
C4	0·0075μF
C5	110pF
C6	30μF
C7	0·04μF
C8	6pF
C9	5pF
C10	0·04μF
C11	0·02μF
C12	0·02μF
C13	5μF
C14	30μF
C15	50μF
C16	0·0075μF
C17	50μF
C18	50μF
C19	not used
C20	4pF



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